



US Army Ordnance Corps Hall of Fame Nomination



NOMINEE DATA

NOMINEE'S NAME: John T. Pitman, Junior

RANK/GRADE: Brigadier General (Retired)

TITLE: Brigadier General (Retired)

DATE AND PLACE OF BIRTH: 12 November 1842/Providence, Rhode Island

DATE RETIRED: November 12, 1906

DATE DECEASED: August 31, 1933

HOME ADDRESS: Deceased. Last know address Orange, NJ.

CURRENT/LAST DUTY POSITION/OCCUPATION:

Retired/Commander, San Antonio Arsenal and Chief Ordnance Officer of the Department of Texas 1906/Author and collector of cartridges and weapons.

PUBLICATIONS/CONTRIBUTIONS TO PERIODICALS:

The Pitman Notes on U.S. Martial Small Arms and Ammunition, 1776-1933:

Pitman, John. Breech - Loading Carbines of the United States Civil War Period The Pitman Notes on US Martial Small Arms and Ammunition 1776 – 1933, Vol 1.

Pitman, John. Revolvers and Automatic Pistols, The Pitman Notes on U.S. Martial Small Arms and Ammunition. 1776-1933, Vol 2.

Pitman, John. US Breech-Loading Rifles and Carbines, Cal 45 The Pitman Notes on U.S. Martial Small Arms and Ammunition. 1776-1933 Vol. 3

Pitman, John. US Magazine Rifles and Carbines Cal 30 The Pitman Notes on US Martial Small Arms and Ammunition. 1776 – 1933, Vol 4.

Pitman, John. Miscellaneous Notes - Cal .30, .50 and .58, Confederate and Foreign. The Pitman Notes on U.S. Martial Small Arms and Ammunition. 1776-1933 Vol. 5

Also, possibly several articles on chemical processes involving acids and nitrates. However, some confusion exists on whether articles were written by BG Pitman or his son.

“The Action of Sulphuric Acid on Mercury” Journal of the American Chemical Society, Vol XX, No 2, February 1898

“The Analysis of Nitric and Mixed Acids by DuPonts Modification of the Lunge Nitrometer”, Society of Chemical Industry, 1900

Developed the most extensive known collection of cartridges and small arms. Donated to the United States Military Academy upon his death as an aide to instruction.

SIGNIFICANT CITATIONS AND AWARDS:

March 10, 1948, General Order Number 1, The Department of the Army, Ordnance Dept. recognized Captain John Pitman for his accomplishment of being the founder of the Chemical Laboratory at Frankford Arsenal, Pennsylvania in 1892. During his tenure, 1892-98, the laboratory was used to analyze, test, and manufacture the first smokeless powder used in the United States for the Department of the Army. Captain Pitman's accomplishment positioned the United States for defense against other countries with like technology. The Department of the Army, Ordnance Dept., paid tribute to Captain Pitman establishing the laboratory by renaming the laboratory from the Laidley Laboratory to the Pitman-Dunn laboratory.

Member of the Army Ordnance Association, American Chemical Society and the Society of Chemical Industry.

SIGNIFICANT ASSIGNMENTS/DUTY POSITIONS:

<u>From</u>	<u>To</u>	<u>Assignments</u>
1861	1861	Private, 1 st Rhode Island Volunteer Infantry
1862	1862	Private, 10th Rhode Island Volunteer Infantry
1862	1863	Sergeant Major, then 2 nd Lieutenant, 11 th Rhode Island Volunteer Infantry
1863	1867	Cadet, United States Military Academy
June 1867		Appointed 2LT of Ordnance
1867	1870	Assistant Ordnance Officer, St Louis Arsenal
1870	1872	Principal Assistant Professor of Chemistry, Mineralogy, and Geology; Assistant Instructor of Ordnance and Gunnery
1872	1876	Assistant Ordnance Officer, Watervliet Arsenal, NY
1876	1886	Ordnance and Testing Officer at Watertown Arsenal, MA
1879	1882	Detailed to Interior Department in Newport, Rhode Island to do chemical work for the Division of Mining Geology of the United States Geological Survey
1882	1889	Commander Fort A. Lincoln Ordnance Depot and Chief Ordnance Officer, Department of Dakota
1889	1890	Commander, Ft. Snelling Ordnance Depot, MN
1890	1892	Chief Ordnance Inspector, West Point Foundry, Cold Spring, NY
1892	1898	Head, Laidley Laboratory, Frankford Arsenal, MA; also in charge of the Arsenal Proof House, 1897-1998
1898	1902	Commander, Augusta Arsenal, Georgia, and Armament Officer of the Southern District
1902	1903	Deputy Commander, Springfield Armory

1903	1906	Commander, San Antonio Arsenal, TX and Chief Ordnance Officer of the Department of Texas
1906		Appointed Brigadier General upon retirement
1906	1933	Avid Small Arms Weapons and Cartridge Collector during Retirement

Rank and Promotions

1867	2d Lieutenant of Ordnance
1874	1 st Lieutenant of Ordnance
1878	Captain of Ordnance
1894	Major of Ordnance
1903	Lieutenant Colonel of Ordnance
1904	Colonel of Ordnance
1906	Brigadier Colonel

EDUCATION:

<u>Civilian</u>	1858- 1861	University of Brunswick, Germany
<u>Military</u>	1863 -1867	United States Military Academy

LIST OF POSSIBLE SOURCES OF INFORMATION ABOUT THE NOMINEE:

Paul Klatt, The International Cartridge Collector. Issue No. 277-278, The International Cartridge Collectors Association, Inc.

Chief, Pitman-Dunn Laboratories Department (assistant T.P. Walsh), "Letter to the author", 7 August 1951

Department of the Army, Ordnance Dept., Frankford Arsenal, Philadelphia 37, General Orders No. 1, 10 March 1948

Misc. Lab notes and correspondence, Archives, Army Field Support Command, Rock Island, IL (Items above in the Archives of the Army Field Support Command, Rock Island, IL)

Rhode Island Historical Society, 121 Hope St, Providence, RI, www.rihs.org MSS626

Archives, United States Military Academy

Association of Graduates, United States Military Academy

Special Collections, USMA Library, West Point, NY

SIGNIFICANT CONTRIBUTIONS TO US ARMY ORDNANCE:

From the time of their creation in the early 1800s the Ordnance Department's arsenals and armories have been as much centers of research and development as manufacturing entities. Research and progress in the armories led to advancements in weapon systems, ammunition, and industrial processes. From the middle of the 19th century until World War II the arsenal and armory system was a vibrant cradle of development and innovation. Brigadier General John T. Pitman, Jr. made his mark during this period of creativity with his contributions in the field of chemistry research in general and explosives chemistry in particular. In addition, BG Pitman was a recorder and collector of the developments in arms and munitions throughout his almost forty-year career and for another twenty-five years after his retirement. Brigadier General Pitman made significant contributions to Army Ordnance in the fields of chemical and explosive research, ammunition, and weapons.

Brigadier General John T. Pitman, Jr. served an extensive and distinguished career in the ordnance field. His expertise provided the Ordnance Department with timeless contributions in small arms, small arms ammunition, standardization, and the establishment and enhancement of extruded smokeless powder in the United States. His contributions to the Ordnance Department were critical in an era where warfare, tactics, and strategy were changing dramatically. BG Pitman's determination, attention to detail, and fervor for small arms were essential to accomplishing the challenge of developing a U.S. variety of smokeless powder.

John Pitman was born in November 1842 in Rhode Island. For many years his father directed a patent office in London, England. During this time overseas the elder Pitman enrolled his son at the University of Brunswick in Germany. Both Pitman's returned to the United States just before the outbreak of the US Civil War. John Pitman began his career with the Department of War in 1861 by enlisting as a Private in the 1st Rhode Island Volunteer Infantry (Co. G), in July 1861. Three days later Pitman was transformed from student to soldier and served our country in the first Battle of Bull Run. In 1862 he enlisted as a Private in the 10th Rhode Island Volunteer Infantry (Co. D). He later served as Sergeant Major, then 2nd Lieutenant for the 11th Rhode Island Volunteer Infantry. In 1863, Pitman was appointed by President Lincoln to attend the United States Military Academy. He graduated in 1867, number ten in a class of sixty-three, and chose the Ordnance Corps as his branch.

After his first assignment at St Louis Arsenal, he went became a Principal Assistant Professor of Chemistry, Mineralogy, and Geology and an assistant Instructor of Ordnance and Gunnery at West Point. Pitman then worked at Watervliet Arsenal in Troy, New York for three years until 1876. From 1876-1886 he began service at Watertown Arsenal in Massachusetts. Under the command of Colonel T.T.S. Laidley, whom he admired and deeply respected, he was the officer in charge of the Emery Testing Machine. The Emery Testing Machine was used to determine the properties and strength of metals to determine use in military munitions applications. In this capacity he conducted many experiments and tests for the government and for private parties. During this same time he gained experience and recognition as a chemist when he founded a chemical laboratory at Watertown Arsenal. In this lab he conducted various analyses and tests, mostly of metals, to determine metal physical characteristics. His work here led to his later assignment to establish a laboratory at Frankford Arsenal. Pitman's work at Watertown included three years detached service in Newport, Rhode Island with the Interior Department. Here he worked with chemicals in the Division of Mining Geology of the United States Geological Survey for the tenth census. His prominent mentors, Professor Raphael Pumpelly, Andrew A. Blair (well known iron and steel chemist), and Frank Austin Gooch (professor of Chemistry at Yale University), taught him valuable information in the field of chemistry. Pitman was able to build upon this experience throughout his career as he became a prominent figure in the propellant and small arms fields.

After his experiences at Watertown Arsenal, Pitman was appointed Chief Ordnance Officer of the Department of Dakota, in charge of the Ordnance Depot, Fort D.A. Lincoln in North Dakota. Here he performed work that was fairly routine, issuing arms, ammo and equipment to troops. However, Pitman took every position he held seriously and he paid the same attention and detail to the distribution process as he would have in a chemical experiment. He never allowed a shipment to leave the warehouse without his personal inspection. He also improved methods of equipment and arms care to enhance the lifespan of military ordnance

equipment and aid soldiers. When Ft. Lincoln was abandoned he was commanded to reestablish the Ordnance Depot at Fort Snelling, Minnesota. Pitman's continued diligence helped establish the depot by November of 1889. In 1890 he was detailed to West Point Foundry at Cold Spring, across from the Academy. Here he inspected 8 inch B. L. Rifles, once again providing his expert scrutiny to specific measurement and detail.

In 1892 the Chief of Ordnance, D.W. Flagler, requested Captain John Pitman's expertise at Frankford Arsenal in Philadelphia to set up a chemical laboratory to study smokeless powders used with smaller caliber ammunition and weapons and to work on fuzes and field artillery ammunition. The United States was behind the European powers in the development of smokeless powder and COL Flagler was determined to close the gap.

After the Civil War the Ordnance Department recognized the need to keep pace with other countries making advancements. Prior to the Spanish American War, gunpowder left heavy traces of smoke in the air after a shot was fired. This was obviously a great tactical disadvantage, because smoke lingered in the air for the enemy to see and target. Several other countries acknowledged the need for a smokeless propellant and accomplished development in less than two years. In 1886 France adopted "Powdre B," its version of smokeless powder. The French formula was not perfected, however it made weapons and ammunition obsolete in all other countries. Almost immediately, militaries around the world took action to develop a smokeless propellant. In 1888 Alfred Nobel invented the second powder called "Ballistite" which was produced in Germany. A year later England developed a similar version named "Cordite." In the United States the Navy was the first to experiment in making smokeless powder. Their efforts were not producing the expected results and in 1892 the War Department set forth its own campaign to produce a United States formula for the powder.

Initial development of smokeless powders originated in the discovery of nitration of organic materials made in University Labs in the US and abroad. The DuPont family had been producing powder and the Ordnance Department wanted to take over this mission. It was one of Colonel Flagler's wisest decisions to recruit Captain Pitman to establish and manage the laboratory. Although Pitman was not the first to create smokeless powder, he notably contributed to the standardization and advancement of smokeless powder in the United States for the Ordnance and War Department. In 1892 Captain Pitman accepted Flagler's request and reported to Frankford Arsenal to begin setup of the proposed. Correspondence between Flagler and Pitman show his meticulous effort to start up the laboratory. Pitman immediately began procuring equipment, books, journals, and powder samples to begin testing the powders being utilized by militaries abroad. By October arrangements were coming into place, and the lab was built.

As the only chemist, Pitman took complete charge of the lab and completed all of the analytical work single-handedly. Because this project was started from scratch and testing methods had not been crafted, he invented many of the testing and analysis procedures used and adapted others from foreign publications. Out of necessity, Pitman developed most of the equipment needed to conduct testing. During his tour, the lab was also used as a reference office for the questions concerning powders and their manufacture and function.

Pitman resourced powder producers and other arsenals to acquire the equipment and powder he needed to begin experimentation. His expertise in experimental testing, chemistry,

and physics can be seen in his notebooks containing calculated tables on velocity, pressure, rate of burn, etc. as he strived to study different powders effects in controlled, unbiased studies. For example, upon request of a powder, he would ask that the sender ship powder in certain ways, controlling for humidity and temperature.

Pitman conducted analyses on powders from firms producing powder for the Arsenal and samples from foreign firms interested in selling powders for small cal and artillery weapons. He performed many tests of storage under cold, hot, wet, or sunlight conditions, physical tests of grain, crushing strength, gravimetric density, and burning time. He also worked on metals for bullet jackets, primer cups, pressure gauges, and other developments. Ballistic tests for velocity, pressure, and accuracy were also conducted to determine the powder effectiveness in various weather conditions.

Pitman's work with smokeless powder development was undoubtedly one of his greatest contributions to Ordnance. Of all his chemical contributions, his most notable was the extrusion of perforated smokeless propellant grain, which is still in use. He paved the way for further development and systemization for determining its properties in the United States. At the same time, Captain Pitman conceived new designs for ammunition to obtain a greater armor piercing capability. He achieved this through establishment of powder standards. As a result of his findings and developments, specifications were created that contractors had to comply with on all lots of powder submitted to the Government. As he was gaining ground in his mission, he began to acquire staff. In 1896, Captain B. W. Dunn joined the lab to organize a study of all types of explosives. Captain Dunn later developed the standard US explosive, Dunnite.

After this monumental contribution to the Ordnance Department, Pitman departed Frankford Arsenal in 1898 to take command of Augusta Arsenal and serve as the Armament Officer of the Southern District. In 1902 he served as Deputy Commander of Springfield Armory and then in 1903 he was assigned as Commander, San Antonio Arsenal and Chief Ordnance Officer for the Department of Texas. In 1906, at the age of 64, he retired at the rank of Colonel and was then promoted to rank of Brigadier General, Retired, based on his Civil War Service.

Upon his retirement from active duty General Pitman began his second most significant contribution to Army Ordnance. Throughout his career Pitman's Ordnance expertise and interest extended beyond his workday. He dedicated his life to Ordnance. In his free time his hobby involved collecting data on small arms weapons and collecting cartridges and their components. Pitman's work in collecting small arms reached back to all those used in this country for military purpose from the time of the Revolutionary War. He collected experimental guns, specialty weapons, pistols, and certain foreign arms. He also collected ammunition for these arms with an equal diligence.

Pitman made drawings of the guns and each part of it with absolute accuracy and detail and included dimensions and weights. Pitman's collection includes 16 volumes of large amounts of data on small arms, which would be impossible to capture if it weren't for the prints, photos, government publications, memos, and letters he collected from several resources. Much current knowledge about the development of small arms weapons in the United States would have been lost if BG Pitman hadn't gathered and organized it himself.

Pitman's cartridge collection was equally impressive. He completed full size drawings that illustrated the cartridges and components. Pasted on the drawings are the original covers and labels from the packaging of ammo, providing a very realistic display. Pitman paid extra attention to paper cartridges. He also completed hundreds of tables providing various pieces of data. For example, he made yearly lists of arms and ammo manufactured and purchased by the Army as far back as 1795. His voluminous compilations are invaluable historical records for reference, and there is no bank of information on this subject that matches his detail. Combined with his library of books on the topics, Pitman created an important reference for the Ordnance Department.

BG Pitman's accumulated data was eventually published as The Pitman Notes. One historian of small arms wrote:

"The value of The Pitman Notes to students and collectors cannot be overemphasized. These volumes are the most important primary source information on United States military small arms and ammunition (1776-1933) not in the public domain. The meticulous drawings, notes, and studies compiled by General Pitman are recorded with unparalleled thoroughness, exactly as presented in his original notebooks. Many of the specimens that Pitman examined exist today only on these pages. It is quite evident that General Pitman was the first serious student of American military small arms and ammunition, and one of few who considered these subjects inseparable."

Upon his death General Pitman donated his collection to the United States Military Academy at West Point to be used in the education of cadets. Today General Pitman's cartridge collection is kept in three cabinets with over 100 drawers at the West Point Ordnance Museum. The drawers trace the development of cartridges used by the Army by year. The contents of each drawer contain a cartridge ready to fire and a cut away traverse section. The powder is also presented in a small glass tube. Some of the drawers exhibit various additional things such as methods of ignition, bullets, and more. Pitman's collection made him an expert in the area of small arms. His experience and information at his disposal led various Government and private organizations to consult him on technical matters even after his retirement.

Brigadier General Pitman greatly contributed to the Ordnance Department in his 42 years of service to the military. Throughout his career Pitman was intrigued by anything pertinent to small arms and continuously collected and analyzed data on the subject. His son remembered his dedication and scrupulous demeanor during his workday; he attended to nothing but the work set forth by the Government. John Pitman died August 29th, 1933 and was buried in Providence.

SYNOPSIS OF SIGNIFICANT CONTRIBUTIONS:

Captain John Pitman's greatest contribution to the Ordnance Corps and the nation was the founding of the Chemical Laboratory at Frankford Arsenal, Pennsylvania in 1892. The laboratory was used to analyze, test, and manufacture the first smokeless ammunition used in the United States for the Department of the Army. By 1900 the laboratory was considered the explosives testing center of the United States. Commercial firms and government agencies consulted the staff and used its facilities. Newly created explosive labs were modeled after the Frankford Laboratory. The Frankford Arsenal reports to the Chief of Ordnance from 1892-1897

reveal what a tireless worker and his interest and scope of knowledge in this discipline were incredible. Captain Pitman's accomplishment in the development of perforated smokeless propellant grain positioned the United States for defense against other countries with like technology.

In 1948 the Ordnance Corps officially recognized BG Pitman's contributions. The Laidley Laboratory at Frankford Arsenal was officially renamed the Pitman-Dunn Laboratory. Until Frankford Arsenal's closure the lab was a flexible scientific organization in ballistics, chemistry, physics, electronics, mathematics, mechanical engineering, and mycology; covering the fields of explosives, lubricants, electroplating, protective finishes and welding.

In addition to his contributions in explosives and propellant, John Pitman was the first serious student of American military small arms and ammunition and realized the inseparable link between the two subjects. His unpublished works show how his passion for U.S. martial small arms and ammo never died throughout his life.

For his significant contributions to the US Army Ordnance Corps in the fields of explosives, propellants, and the history of small arms, Brigadier General John T. Pitman, Jr. is deserving of induction to the US Army Ordnance Corps Hall of Fame.



BG (Ret) John T Pitman, Jr.
Circa 1905